INDEX 1951

DECEMBER 1951

FIREMEN

FIFTY-SIXTH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

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Being demonstrated here is the powerful JOHN BEAN Model HPV-750 Fire Fighter. This hard-hitting, two-fisted model combines TWO high-pressure and THREE volume lines. The two high-pressure fog lines each deliver 30 gallons a minute at 850 pounds pump pressure . . . while, AT THE SAME TIME, the three 2½-inch lines deliver a total volume of 750 gallons a minute at 150 pounds pressure!

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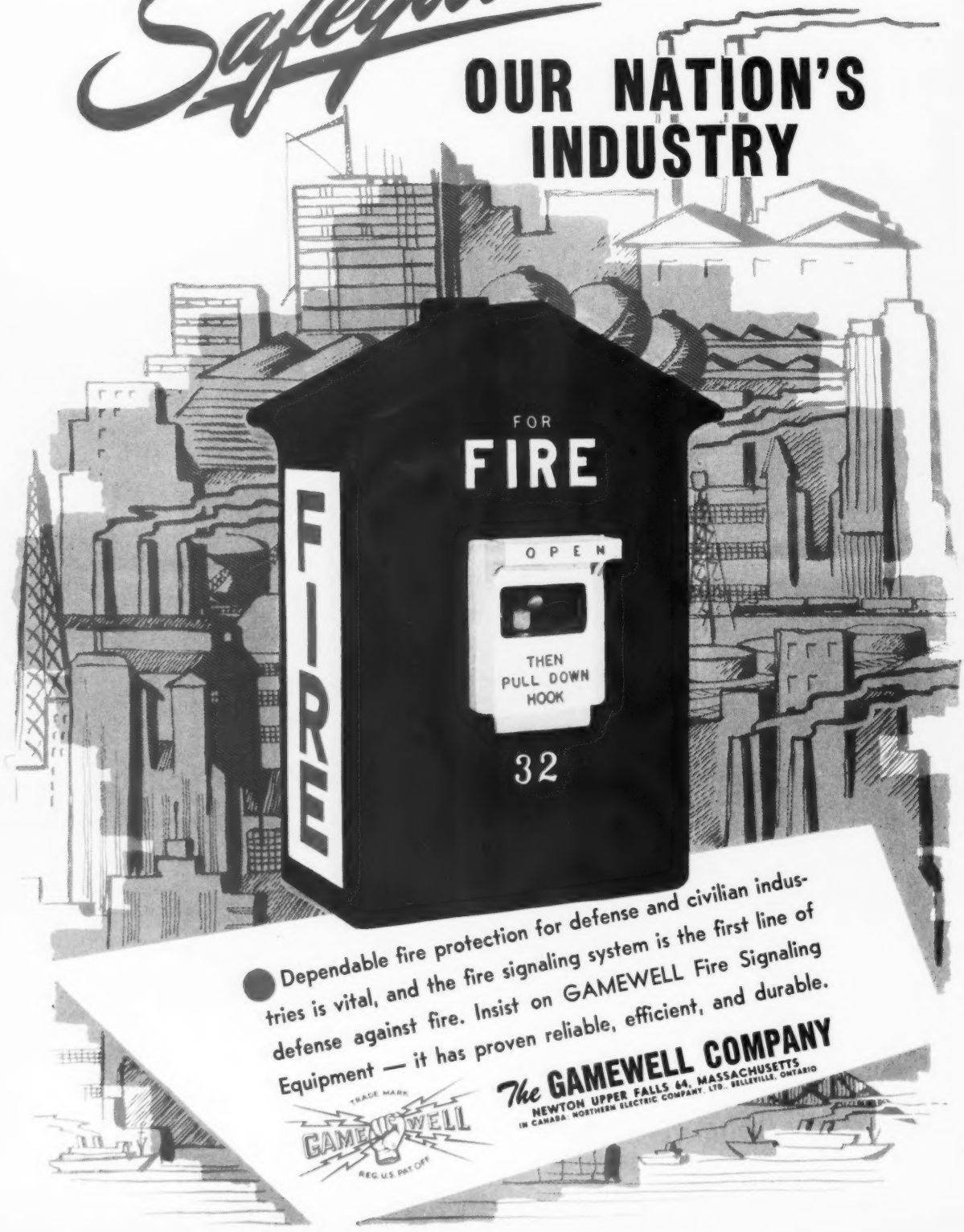

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Photo Courtesy St. Paul Dispatch Pioneer Press

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During 1952?

IS YOUR fire department receiving SIX (6) subscriptions to FIREMEN with its NFPA Fire Department Membership? Are these magazines being distributed properly to the officers and men in your department? Have you asked how many members in your department would like to receive extra subscriptions to FIREMEN during the coming year for only $1.25 each? Are the other publications that are included in your membership being made available through your department library?

This is a good time to take stock for the coming year and to make certain that your department is receiving the full benefits of its membership in the NFPA. Here is an outline of what NFPA Fire Department Membership can bring to you and your department during the coming year:

As a member of the uniformed fire service, your membership will cost $12.50 per year and will include subscriptions to FIREMEN, to the monthly *Fire News*, to the NFPA *Quarterly*, and also a number of important publications which are made available to members from time to time. You will also receive a handsome membership certificate, suitable for framing.

If your fire department enrolls as a unit, or if you are a fire chief, then SIX (6) subscriptions of FIREMEN will be included in the membership, together with the above publications, for the same $12.50. If you desire to have more than six subscriptions sent to your department, then additional subscriptions will cost $1.25 each.

NFPA Fire Department Membership is available to individuals in the uniformed fire service, to any paid, call, or volunteer fire department, and to industrial fire brigades. The "six-copy" plan of membership is available only to chiefs of fire departments and fire organizations as unit members.

Other members of NFPA may secure subscriptions to FIREMEN for $1.25 per year in addition to regular membership dues. Any additional subscriptions to FIREMEN also cost $1.25 per year.

Why not be well-informed during the coming year in matters pertaining to fire protection? Merely fill out the application blank below and mail it to the NATIONAL FIRE PROTECTION ASSOCIATION, 60 Batterymarch Street, Boston 10, Massachusetts.

F-16

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60 Batterymarch Street, Boston 10, Mass., U.S.A.

Application for Fire Department Membership in NFPA

Please enroll .....
(Name of individual or organization, rank, title, or business connection)

Individual ☐
Paid Fire Department ☐
Call or Volunteer Department Company ☐
Industrial Fire Brigade ☐

City or Town..... **County**.....

Mailing Address .....

..... **State or Province**.....

Fire department organizations and chiefs of fire departments joining NFPA should send mailing list for 6 subscriptions to NFPA FIREMEN magazine. Additional subscriptions cost $1.25 each.

Enclosed $12.50 (Check or money order) ☐
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Firemen

Volume 18 — Number 12

WARREN Y. KIMBALL — EDITOR
PAUL R. LYONS — ASSOCIATE EDITOR
HENRY S. GERE — ADVERTISING MANAGER

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NATIONAL FIRE PROTECTION ASSOCIATION

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Quads and Quints

The cover photo (courtesy Mack Motor Truck Corporation) shows a modern "quintuple" combination pumper and aerial ladder with 5-man cab. This apparatus combines five fire-fighting functions: a 750 gpm pumper, a 1000-ft. hose body, a water tank with two booster reels, manually raised aluminum ladders, and a 65-ft. aerial ladder. While no fire truck is likely to be called upon to do five fire-fighting jobs at once, the fact remains that more and more departments are finding that a "quad" or "quint" combination has a wide range of usefulness on the fire ground and as a reserve.

Provision of a larger capacity pumper on an aerial ladder is not a strange combination when it is desired to provide heavy streams at good pressure from a ladder pipe or monitor nozzle. When regular pumpers are at distant hydrants much of the pump efficiency may be lost unless a pump is provided at the scene of the fire to boost the pressure. A "quint" truck with water tank and booster lines is capable of handling many fires without tying up both an engine and truck company. A display of "quadruple" and "quintuple" combination fire apparatus appears on pages 16–17 of this issue.

The National Fire Protection Association and the Editors of FIREMEN extend to all members and to other readers of the magazine the very best of season's greetings. It is hoped that the coming holiday season will bring a conscious effort on everyone's part to minimize tragedy and loss through fire. In reports submitted to the NFPA Fire Record Department, 662 cities reported 353 Christmas tree fires during 1950. The estimated total of these fires for the United States in the same period was 1,222. While the merriment of the holiday season will bring moments of carelessness and unsafe practices, nevertheless, it is possible that the activities of members of the fire service in stressing fire prevention in this important season will bring a minimum of loss through fire.

Is This True of Your Department?

"I want to tell you about the best fire department in the U.S.A.

"Last Friday morning I was laid up in bed, got up momentarily, glanced out the window to find the roof of the house next door almost completely obscured with swirling smoke. A quick call to your fire department, quick jump into trousers and shirt over my pajamas and a dash into a front yard before I heard the welcome sound of the sirens just coming over the hill. By that time the attic fire had gained such headway with a strong northern wind blowing it seemed that the neighbor's house and mine would certainly be destroyed.

"The men of your department were too fast for that. They swarmed into the basement, the house, and on top of the roof too fast for accurate observation — other than the thankful feeling that competent men were there to help us.

"With the amount of fire observable, I fully expected every wall in the house to come down and the Niagara Falls to shoot from every door and window. Again I was wrong. How anybody can put out so much fire with so little water, I'll never know.

"Delicately they chopped two very small holes in the wall to get the fire that had eaten down between them and used small squirts of water to put out the flame. Then they asked permission to put a hole which was quickly granted, and that was the last of the fire.

"There was very little water in the house and no furniture damage, but they insisted on moving the furniture to safe spots, spreading sawdust on the floor and mopping up in a most exacting manner. I observed one of them washing out the bathtub where some embers had fallen. What a crew.

"I was particularly struck not only with the skill and assurance your men displayed, but particularly the kind words of hope and sympathy to the heartsick home owners who thought everything was lost. We hated to see them leave. They seemed like guests in my neighbor's home.

"Congratulations to a great team — you and your men. You have never received the recognition you deserve."

From a letter to the Director of the Fire Department, Kansas City, Missouri. — Ed.

New station and tank-pumper apparatus at North Randolph, Massachusetts, built as a result of campaign sparked by Fire Captain Joseph F. Brewster

Old No. 2 fire station replaced in 1951.

The "Little Giant" of North Randolph

by Warren Y. Kimball

ALMOST always in every community some individual or group is needed to spark necessary improvements in fire protection. An outstanding example of the influence one man can exert has been demonstrated at North Randolph, a part of the Town of Randolph in eastern Massachusetts where Fire Captain Joseph F. Brewster has played a key role in obtaining a much-needed new fire station and fire equipment. When Joe moved from Boston years ago to raise his family of 12 children there was no active fire company in North Randolph. His brother was a Boston fireman and having many friends in the fire service Joe lost little time in activating a fire company which became Co. 2 of Randolph.

Although short in stature, Joe has been a powerful man of the type to whom neighbors instinctively turn for help in an emergency. His skill as a first-aider has resulted in saving the lives of several persons who might not have survived if not cared for before removal to a city hospital.

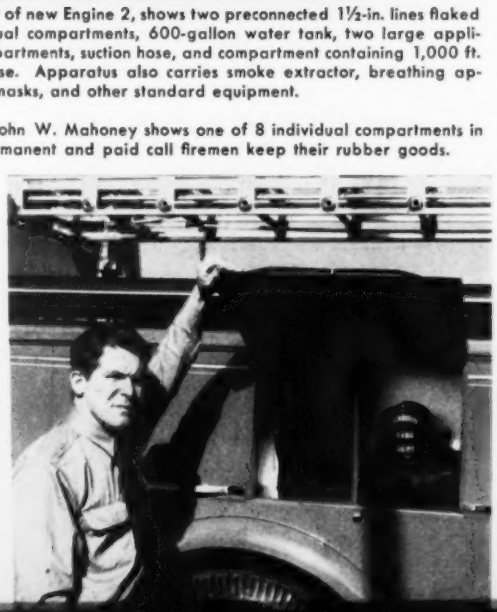
A skilled electrician, Joe early took up radio and his "shack" is filled with trophies and awards indicating his standing among radio "hams" in all parts of the world. As a volunteer monitor during the last war he participated in tracking down several radio outlets used by enemy agents.

When the town decided to have a permanent fireman at Station 2, Joe was appointed to the post with the rank of Captain in charge of a paid-on-call company. The old wooden fire station, its upstairs filled with radio equipment became a mecca for communications and fire-fighting men who came to their "little giant" to swap ideas and obtain helpful suggestions. For many years Joe was on continuous duty except for meal hours and the occasional day off.

Rear view of new Engine 2, shows two preconnected 1½-in. lines flaked in individual compartments, 600-gallon water tank, two large appliance compartments, suction hose, and compartment containing 1,000 ft. 2½-in. hose. Apparatus also carries smoke extractor, breathing apparatus, masks, and other standard equipment.

Fireman John W. Mahoney shows one of 8 individual compartments in which permanent and paid call firemen keep their rubber goods.

Captain Brewster and Fireman Mahoney show some of the 23 storage compartments, many of them lighted, on the new truck. Also shown are the 600 gpm Barton front-mounted pump which delivered 860 gpm in test from hydrant, two power operated Hannay booster reels, 35 ft. aluminum extension ladder and 14 ft. roof ladder.



After World War II, the department went on two platoons and Captain John F. Walsh was assigned to command the other shift but Joe continues to respond during off-time and serves as a call fireman. He did, however, have time to build a new radio shack for station W1JQA that took most of his radio equipment out of the fire station.

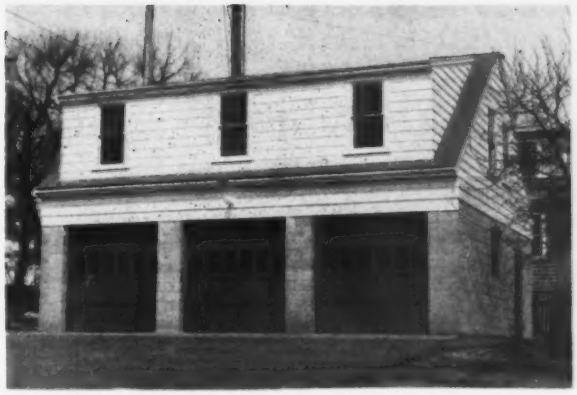
As time passed Joe became more and more concerned over the need for a new fire station and new apparatus for his company. Like other rapidly growing towns it was no easy matter to obtain an appropriation because plans were under way for a new $1,400,000 high school and other community projects. The fire department headquarters station, although larger, was also in an old frame building needing eventual replacement.

However, as the doors to the old No. 2 fire house began to bulge inward and the wooden floor of the old building, located on rented land, began to sag, Joe decided that it was up to him to interest the community in better fire protection. As an elected member to the Town Meeting which votes all town appropriations, Joe convinced his neighbors and other town meeting members of the importance of having a new station and secured the appointment of a committee to draw up plans. Also sitting with the committee which subsequently became a building committee was Deputy Fire Chief Carlton P. Harris of Randolph. An excellent site on State Highway 28 was obtained for $850.

An appropriation of $38,500 was voted for the erection at a new site of a 2-story brick oil-heated fire station capable of housing 3 fire trucks. Plans included 2 dormitories for the permanent men, a meeting room and kitchen upstairs, and an apparatus room with 3 large overhead doors downstairs. One door accommodating a brush fire truck faces the rear driveway.

The new fire station was occupied early in 1951 and with Joe overseeing the laying of every brick about $3,500 had been saved which could be applied toward the purchase of a new truck to replace the 25-year-old pumper. Joe had had his eye on a tank-pumper similar to one pictured in NFPA FIREMEN for December 1947.

An appropriation of $9,000 was secured and Fire Chief Harold L. Bailey of Randolph placed an order with the Farrar Company of Woodville, Mass., for the new truck illustrated on these pages. This was delivered in September 1951. The truck is designed as a complete community fire-fighting unit. Its front-mounted Barton pump is rated at 500 gpm at 150 lbs. or 600 gpm at 120 lbs. It has 600 gallons of water with two live reels and two pre-connected 1½-in. lines.



Radio shack W1JQA from which in spare time Joe Brewster has contacted radio "hams" in all parts of the world. Only the bases of two tall directional antenna show in photo. After the war Joe equipped both police and fire department vehicles with new 2-way radios obtained from war surplus.

At present the permanent men in Joe's company work two 10-hour day shifts and one night shift before having 24 hours off.

Company 2 receives its alarms both by the Town's Gamewell alarm box system and by listening in on the fire phone which rings in both stations 1 and 2. Chief Bailey has directed that at fires in its own district, Co. 2 shall go to work with lines from the tank which will be backed up by a supply line from Co. 1 on arrival. On downtown fires, the company responds as a second engine company to provide 1½ or 2½-in. lines as needed.

While very happy to be accepting congratulations over the improved fire protection facilities in his district, Joe is confidently hoping that these will lead to appropriations for other new equipment for the department including a new headquarters station with more adequate fire alarm facilities and a new aerial ladder.

Amphibious Fireboat, Essex, Connecticut

The volunteer fire department of Essex, near the mouth of the Connecticut River, protects some $5,000,000 worth of yachts and other marine property. The department recently acquired a war surplus Army "duck" for $1,100 and with a lot of hard work developed a handsome red and white fireboat equipped with 500 gpm OCD pump, forward turret nozzle and two hand lines. This apparatus housed in a fire station can travel up to 60 mph via highway to a point adjacent to the fire at which it runs into the water to operate as an efficient fireboat.

Fire Chiefs' Drill School at Old Forge, New York

By Warren Y. Kimball

SEVERAL hundred fire chiefs and fire fighters attended one of the most interesting fire training programs that has recently come under the writer's observation when the seventh annual "Fire Chief's Drill School" was held at Old Forge in the Adirondack area of New York State on September 15th and 16th. The program was directed by W. L. "Army" Armstrong, a fire equipment distributor assisted by Chief Albert Brussel of Old Forge, Chief Lewis Wakefield of Homer, Chief De Hollander of Brighton, Chief Bud Dunn of Big Moose, Chief V. Norton of Otter Lake and Chief Bird of Inlet.

The program opened with a talk on new fire fighting methods by Warren Y. Kimball of NFPA FIREMEN. Then Assistant Chief Carl Smith described his Saranac Lake High School fire squad and its training and its civil defense program. Chief Allen V. Evans of Griffiss Air Base told what to do if planes crash in a fire department's district. Chief Basil Post described plant protection in the Massena plant of the Aluminum Corporation of America. Chief Charles L. Butts of the Norwich Pharmacal Company outlined fire safety with hazardous chemicals. The State Conservation Department and assisting volunteer departments demonstrated a relay with portable pumps. The Sidney Fire Department's first aid squad, state champions, gave a demonstration directed by Chief Archie Spencer. A spectacular night demonstration of fires involving pyroxylin, magnesium and other hazardous materials was carried on by the Brighton fire department directed by Chief De Hollander and Deputy Chief Foos of Rochester. A panel of fire chiefs described experiences in

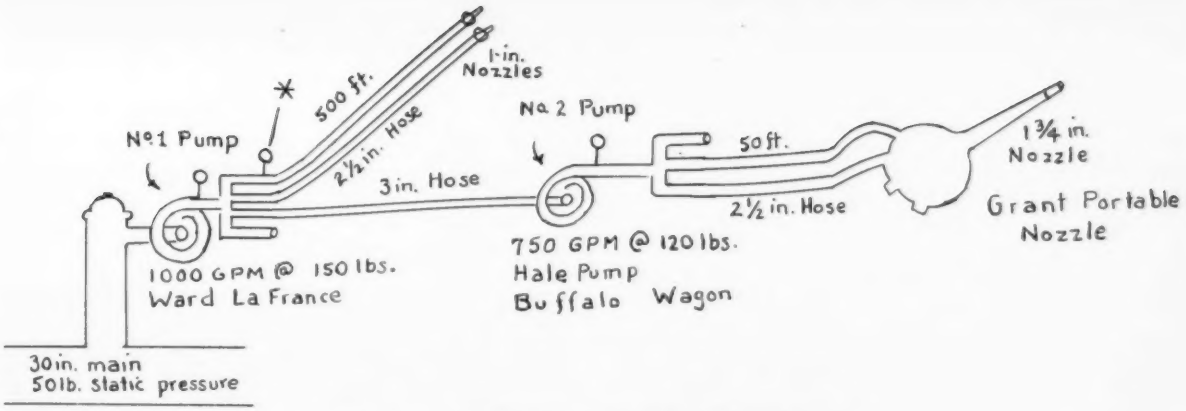
(*Please turn to page 23*)

Old Forge has a new fire station with 60 x 55 ft. apparatus room having three 14 x 11 ft. doors and costing $54,000 to date. The recreation room overlooks beautiful First Lake of the Fulton Chain. Its floor, inlaid by Armstrong cork, includes a large fire department emblem and a shuffle board design. The station has a fully equipped hospital receiving room provided and maintained by the Covey-Pashley Post 893 American Legion. The new $7800 Miller-Cadillac radio equipped ambulance purchased for the fire department by public subscription carries a record of the blood type of almost all residents. The F. D.'s Women's Auxiliary have their own club rooms and operate a teen-age club with refreshment stand and a PA system for dances attended each week by 70 to 90 young people. In the center of the photo is Chief Albert Brussel. Behind him is the Old Forge 500 gpm tank-pumper which carries the first 3-stage (Hale) high pressure pumper delivered to any fire department.

Equipment lined up before the Old Forge fire station including (left to right): Mattydale's tank-pumper with 3-stage pump, built by Young Fire Equipment Company of Buffalo; an Olds 88 "Fire Chief's Special" with high pressure fog equipment; the Willys "Blitz Buggy" with two high-pressure fog reels, foam equipment, and 1½-in. hose. This unit pumped 84 gpm through a 2000 ft. uphill line of 1½-in. hose while both high-pressure fog guns were in operation.

New York State Conservation Department rangers take part in demonstration of relay pumping with portable pumps. Here two Pacific Marine pumps take suction from container filled by relay through 1½-in. unlined forestry hose.

Willys 4-wheel drive "Blitz Buggy" equipped with 200-gallon tank and 150 gpm pump demonstrates ability to discharge two high-pressure fog guns while travelling at 20 mph.



Tests of Pumpers in Tandem

BECAUSE situations sometimes arise where it may be necessary to supply two pumpers from the same hydrant, it seemed desirable to obtain some data regarding pumper performance using this method. As has been pointed out in the November issue of FIREMEN, some departments have the second pumper take suction by connecting to the large suction intake on the off side of the first machine. Others have a second hydrant outlet gated for use by a second machine.

There may be times, however, when the hydrant has not been gated and where the large suction inlets are not gated (a common situation). Accordingly, attempts were made to obtain some data as to the possibility of obtaining a supply for a second pumper from one of the discharge ports of the first machine. In such a case the second pumper would actually act as a pressure stage for that part of the discharge of the first machine that passed through it. The first pump would handle the entire volume of water and the second pump would increase the pressure where heavy streams were wanted.

Tandem Pumping	Test No. 1	Test No. 2
Hydrant static pressure	50 lbs.	50 lbs.
Pump No. 1	1000 gpm.	1000 gpm.
Rated capacity	@ 150 lbs.	@ 150 lbs.
Residual pressure	20 lbs.	25 lbs.
Pump discharge pressure	135 lbs.	175 lbs.
Motor rpm.	1500	1500
Nozzle pressure — hand lines	40 lbs.	50 lbs.
Nozzle sizes	two 1-in.	two 1-in.
Diameter — hand lines	2½-in.	2½-in.
Hose to No. 2 Pump	50 ft. 3 in.	100 ft. 3-in.
Discharge gpm. — handlines	374	418
Total discharge gpm	1187	958
Pump No. 2	750 gpm.	750 gpm.
Rated capacity	@ 120 lbs.	@ 120 lbs.
Residual pressure	80 lbs.	2 lbs.
Pump discharge pressure	120 lbs.	50 lbs.
Motor rpm.	1600	1000
Nozzle pressure-gun	80	35
Diameter discharge lines	2½ in.	2½ in.
Discharge of gun — gpm	813	540

The Editors of FIREMEN requested Battalion Chief A. M. Grunwell of the District of Columbia Fire Department (Member NFPA Committee on Firemen. Training) to assist with the following experiment: Assume that a 1000 gpm pumper on a large main close to a fire is supplying two hand lines and a heavy stream is wanted. Can a 750 gpm pumper obtain enough water from a discharge port of the first machine to supply a good heavy stream?

From the information supplied it is possible to make several interesting observations. It should be noted that the 750 pump had a class B rating capable of only 375 gpm at 200 lbs. and was operated at its rated capacity at 120 lbs. to give maximum volume for a large stream. Actually, the length of line between the second pump and the nozzle is not too important as long as the incoming pressure is positive and the discharge hose layout is within the capacity of the pump. As Chief Grunwell points out, with this pump giving capacity at only 120 lbs. it is important to use large hose or multiple lines to keep down friction loss. Had a Class A 1000 gpm pump been used for the second stage it should have been possible to deliver 700 gpm at 200 lbs. discharge pressure.

Assuming the hydrant supply to be ample to meet the requirements of both machines, the critical factor is obviously the capacity of the supply line from the discharge port of No. 1 pump to the intake of No. 2 pump. With 813 gpm flowing the friction loss in 3-in. supply hose was better than 1 lb. per ft. Except for the fact that hose comes in 50 ft. sections there would seem to be no reason for using a 50-ft. supply line. A 15-ft. section of the same size would have resulted in perhaps 16 to 17 lbs. friction loss. A better arrangement might be to connect the two pumpers with a large diameter suction sleeve, hard or soft, using a $4\frac{1}{2} \times 2\frac{1}{2}$-in. reducer. A good soft suction sleeve should be capable of withstanding 200 lb. test pressure and should have been able to withstand 150 lb. discharge from the first pump.

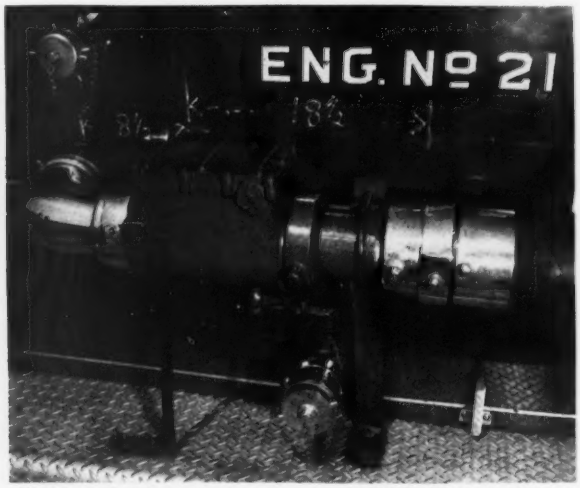
Another observation of interest is that the operator of the first pump had to "squeeze" the discharge gates to the hand lines to avoid giving too much pressure. This points to the advantage of specifying individual gages to record the pressure for each pumper discharge gate. After all, the cost of a couple of extra gages is not great compared to the cost of a pumper and they may mean a lot in terms of safety for the hose crew.

Ingenuity in St. Louis Fire Department Shops

MANY persons in the fire service may not appreciate how much they owe to the devoted personnel of the fire department repair shops not only for keeping fire apparatus running at top-notch efficiency but for many innovations that make the fire-fighting job safer. One of the outstanding fire department shops is that at St. Louis headed by Chief Master Mechanic Fred H. Witler. Fred is well known to men who attend the Fire Department Instructors' Conference at Memphis.

In the program for improving the St. Louis fire-fighting equipment, Chief Witler has had the wholehearted backing of St. Louis Fire Chief Walter H. Kammann. Also a school for pumper operators has been set up in the shop under the direction of Chief Instructor Thomas L. Godfrey with numerous teaching aids such as cutaway pumps provided by Chief Witler.

Chief Walter H. Kammann of the St. Louis Fire Department confers with Chief Master Mechanic Fred H. Witler (back to camera) while two firemen experiment with a simple lever device made to teach how leverage will permit one or two men to easily handle a 30-ft. extension ladder.



All St. Louis Fire Department pumpers carry a 20-ft. "squirrel-tail" hard suction connected to a swivel inlet on the pumper permitting one or two men to easily make the hydrant connection. Recently, the shops installed the clapper valve arrangement shown above so that pumps may be carried wet for routine booster tank operations without loss of water through the large suction hose. Note that a gated 2½-in. inlet is also provided for use in supplying the pumper by means of a 2½-in. or 3-in. hydrant line to back up 1½-in. streams initially supplied from the booster tank. Or one or two 2½-in. lines can be so supplied when the hydrant is nearby.

Shop-built trailer demonstrating how a water curtain made by two large fog nozzles can protect large exposures at major fires. Built of expendable material these units can be set up and left in alleyways and other points where it would not be expedient to place costly apparatus that might be destroyed by a fire or by falling walls. At lumber-yard fires such a fog barrage can permit hand lines to be brought into effective range.

The St. Louis Fire Department demonstrates one of its trailer fog units to the 1951 convention of the Missouri Valley Association of Fire Chiefs. This unit built in the shops from spare parts has two monitor nozzles with various tips including 400 gpm fog nozzles. Each inlet and outlet is gated and outlets may be used for advancement of hand lines when heavy streams are shut down. The picture taken outside the shop shows a fog nozzle adjusted to "solid" stream position.

Firemen's Training in Kansas

Large volume gasoline fire, Kansas Fire School, Hutchinson, Kansas.

THE organization and development of firemen's training in the State of Kansas through the years illustrates the progress that can be made in this important field through careful planning and cooperative effort.

Until 1929 when the first organized Annual Kansas Fire School was held in Newton, Kansas, the only training class recorded was a fireman training short course listed by the Kansas Bureau of Correspondence from 1914–1920. There is no record, however, of any Kansas fireman having taken this course. An item that is important is the fact that firemen were the first non-academic group in the state to request additional in-service training education.

Since the First Annual Fire School there has been a growing appreciation among fire departments and other units connected with the fire service that more intensified training was needed throughout the year. Many departments set up their own training schedules. For the others a state-wide training program was developed whereby qualified instructors traveled through the state to present the necessary training. This program was developed by the fire departments, the State Board of Vocational Education and the University of Kansas Extension.

In 1948 these groups together outlined a program to be financed by the state and submitted this information to the 1949–50 Legislature. Sums were appropriated to the amounts of $7,500 for 1949 and $10,000 for 1950. These were augmented by the Kansas State Board for Vocational Education and other agencies interested in fire protection.

In July, 1949, Keith Royer was appointed to organize and conduct a firemen's training program on a state-wide basis. (Mr. Royer, last month, was appointed Chief Instructor of Firemen's Training at Iowa State College. See FIREMEN for November, 1951. — Ed.) The circuit type of training was introduced whereby qualified instructors gave three hours of training each week for five consecutive weeks to four or five departments located close together geographically. This gives each department a total of fifteen hours of instruction and the instructor can render additional assistance to the chiefs and the departments during the day. In addition the instructors conduct officer training, instructor training, and many technical classes.

At present, two instructors are doing this field work. The firemen's training program is now reaching approximately 60 towns and 1,000 firemen per year. Approximately 575 fire departments will receive this type of instruction.

The Annual State Fire School originally was given a sum of $500 appropriated by the State Legislature for the purpose of acquiring experts to give instruction in firemen's training. Now the Fire School has been incorporated as a part of the state-wide firemen's training program.

Advice and assistance is given to this program by the Kansas State Firemanship Training Committee. This committee is made up of representatives of the Kansas State Fireman's Association, the Kansas State Board of Vocational Education, the Kansas State Fire Marshal's Office, the Kansas Inspection Bureau, and the University of Kansas Extension. The committee meets once or twice each year to outline a program for the forthcoming Fire School.

Panel discussion, McPherson, Kansas, Officers' Training School.

As reported in the November issue of FIREMEN, the past year witnessed 650 volunteer firemen receiving training under this program with an additional 159 officers participating in 4 thirty-hour Fire Department Officer Training Courses and 277 men attending the Twenty-first Annual Fire School.

Attacking oil blaze, Yates Center, Kansas.

Chief Harley Yokum presenting certificates at Atchinson, Kansas, Officers' Training School.

Mayor Fred Bergman giving pump operations a try at Burlington, Kansas, Fire School.

The 1950–51 Fire Squad of Saranac Lake High School, Saranac Lake, New York

Fire Squad, Saranac Lake High School

by Assistant Fire Chief Carl Smith, Instructor,
Saranac Lake High School, New York

THE fire squad and fire-training program at Saranac Lake High School dates back at least to October, 1922, when the school's publication reported on the fire squad organization. During the first week of school each year, the old members of the fire squad meet and elect one boy as chief. In addition, a captain is elected for each floor of the building, and these officers meet with faculty advisers responsible for the fire safety program. The squad operates under written by-laws and new members are required to attend a basic fire training course. After passing a final examination, they receive an attractive certificate.

Chief Smith displays some of the teaching aids used in instructing the fire squad. Use of wyes, siamese, adapters, gates, and double couplings are all demonstrated with small fittings with pipe or garden hose thread so that when fire squad members are sent for appliances at a fire they will identify and know the use of each tool. The small drill tower quickly assembled on dowels permits indoor refresher drills in proper placement of ladders which are scaled 1 in. equals 1 ft.

There are a number of special inducements to fire squad membership including attendance at all movie and auditorium programs free. Fire squad officers are required to try the exit doors before each school assembly and to see that exit lights are operating.

Twenty-eight boys have been trained to help the fire department at fires. They are required to know all standard fire department tools. While they do not engage in actual fire fighting, they do run errands at fires and are sent to obtain appliances from the apparatus. It is found that these boys make excellent recruits for the fire department.

At school fire drills and at air raid drills the fire squad members take the standpipe hose from the racks and make donut rolls which are available for running lines as needed. At fire drills the donuts are taken to the floor indicated by the fire signal. In the case of a fire drill, the floor captain, upon not finding an actual fire, assigns a fire problem to the fire squad. At every fire call one hose line and two extinguishers (both soda acid and CO_2) are present. No hose lines may be run until the last student has passed the hose stations going toward the exits.

In training the fire squad, considerable use is made of excellent scale models to teach various fire-fighting appliances and evolutions so that the boys are thoroughly familiar with their use. The small four-story drill tower is made in sections joined by dowels so that it can be readily stored or carried. The model drill tower has a sloping roof, chimney, and a wire attachment to provide a demonstration of the underwire ladder raise and permits demonstration of all fire department ladder operations in miniature.

The miniature fire equipment has also been found valuable to the Saranac Lake Fire Department in rehearsing various operations following winter-time fires. With temperatures as low as 40° below zero it is undesirable to conduct outside drills.

Elementary Fire Fighting, Saranac Lake High School
Final Examination

Group I. Circle the number of the true statements.

1. Soda Acid fire extinguishers are good to use on electrical fires.
2. Water if properly applied may be used on any fire.
3. Some hydrant wrenches may also be used as spanner wrenches.
4. To reduce from 2½" to 1½" hose we use a wye.
5. Opening or closing the nozzle suddenly causes sudden heavy pressure which might throw the hose.
6. "Straight lay" means laying the hose from the hydrant to the fire.
7. The "donut roll" speeds the laying of hose on a reverse lay.
8. A double female connection is used to connect the female ends of two lengths of hose together.
9. A siamese is used to bring two lines into one.
10. Carbon tetrachloride extinguishers should not be used in confined spaces.
11. A carbon tetrachloride extinguisher expels a stream which is not a conductor of electricity.
12. The butt of a ladder should be placed directly under the point to which the top is going.
13. The stream from a fog nozzle helps take the smoke out of a room by giving off extra oxygen.
14. High pressure fog is one of the most efficient extinguishers for all types of fires known today.
15. Salvage is the protecting of furniture and belongings from excessive water damages by covering.

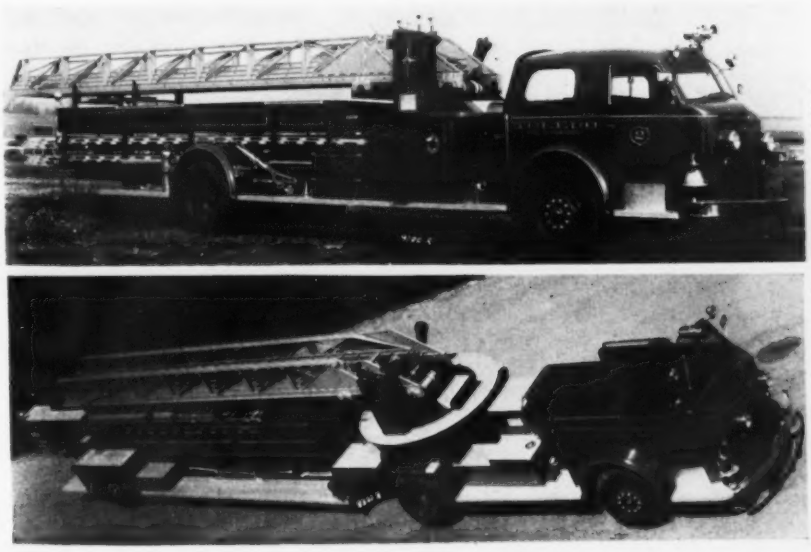
Group II. Complete the following statements.

1. To split a 2½" line into two 1½" lines we use a.....
2. Fire in the motor of an electric elevator should be extinguished by using.....
3. In question 2 the following precaution should be observed .....
4. In opening a door to a room in which there is a smouldering fire the greatest danger is from.....
5. A hose clamp is used to.....
6. Before breaking a window to open it always.....
7. Oil fire in a pit is best fought with.....
8. A 45-foot ladder should be placed with its butt .....feet from the building and should have only.....men on it at one time.
9. Wrenches used for loosening or tightening hose connections are called.....
10. An extension ladder may be braced or steadied by the use of.....

This certificate is awarded to students completing the fire-fighting course at Saranac Lake High School. The examination on this page indicates the type of "fingertip" knowledge required of these students.

Group III

1. Name 3 types of fire extinguishers and tell one place where each would be used.
2. Show by illustration and explain the difference between a siamese and a wye. How could either be substituted for the other?
3. How would you determine the distance the butt of a ladder should be placed from the building? How many men should be allowed on a 28-ft. ladder and what determines this?
4. Explain and illustrate what is meant by the "donut roll" where and why it is used.
5. Illustrate a double female connection and a double male connection and tell what they are used for.
6. What is meant by Ventilation and what precaution should be observed in Ventilating?
7. Explain correct method of opening a window with an ax — what could be used if an ax were not available?
8. What is an adapter?
   Illustrate one and tell what it is used for?
9. What precautions would be observed in each of the following cases:
   (*a*) Handling hose on ladders.
   (*b*) Handling high pressure hose.
10. In regard to ladders explain each of the following:
    1. bed ladder
    2. fly ladder
    3. beam
    4. rung
    5. halyard
    6. hooks
    7. solid side ladder
    8. truss type ladder
    9. single section
    10. extension ladder



Correction Notice

The Chinese, 'tis said, used to insert deliberate editorial errors in their publications so that readers would read more intensely because of the flattery of discovering the mistakes. FIREMEN is not edited for that purpose. Its readers have shown their perspicacity many, many times and errors have proven to be more bothersome than flattering.

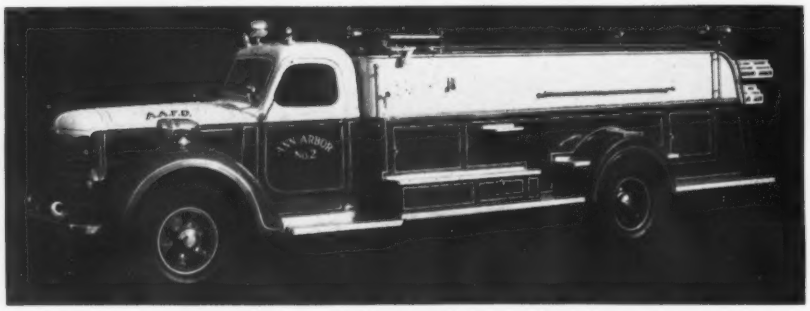
For this reason, a mistake that appeared in the November issue needs correction. The two trucks at left were incorrectly identified in the article entitled "Latest in Aerial Ladder Trucks" on pages 18 and 19.

Both pieces are manufactured by the American-LaFrance-Foamite Corporation of Elmira, New York. Top picture at left shows a 4-wheel, 100-ft. steel aerial ladder truck, closed cab with 5-man seating; 37-ft. turning radius; all aerial operations hydraulically controlled from pedestal; distance between ground jacks 145 in. Bottom picture shows a 100-ft. tractor-drawn steel aerial ladder with aluminum ground ladders, 5-man seating in open cab.

Quads, Quints, and

American-LaFrance-Foamite Corporation, Elmira, New York

This handsome 750 gpm pumper-ladder combination has an all-bronze pump, 215-hp. V-12 engine, 220-in. wheelbase and 37-ft. turning radius, 5-man enclosed cab ahead of engine, gated pumper inlet for in-line pumping. Ladders include 50-, 35- and 30-ft. extensions.

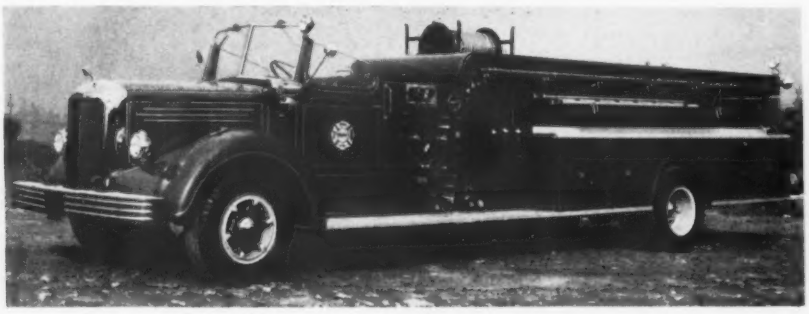


John Bean Division, Food Machinery and Chemical Corporation, Lansing, Michigan

This is a combination high-pressure fog and ladder truck. It carries aluminum ladders from 10 to 45 ft. long, plus a large water tank and two reels with high-pressure fog guns.

Kenworth Motor Truck Corporation, Seattle, Washington

One of several new enclosed ladder and salvage trucks of the Seattle Fire Department, built on a 240-hp. Kenworth truck chassis. Note side windshield and hand rails for crew.



Mack Manufacturing Corporation, Long Island City, New York

A type 85LS Mack with 750 gpm pumper-ladder combination with semi-cab, 250-gallon water tank, aluminum ladders. Note double coat and boot rails and special side compartments. See Quintuple combination on cover of this issue of FIREMEN.

Since before the days of motor fire apparatus various types of combination fire trucks have been popular after it was discovered that one team of horses could pull a truck carrying both ladders and chemical tanks or hose and chemical tanks. The advent of motor driven apparatus increased the motive power from two or three horsepower to 200 or more hp and made possible further combinations of fire fighting equipment on one chassis. The pumper was placed on the hose and chemical (later booster) truck making a "triple combination" and various combination ladder trucks have become popular.

Pumper-ladder combinations ("quadruple-combinations") sometimes are thoughtlessly attacked as undesirable on the ground that the pumper should be at a hydrant and the ladder truck at the fire. This may be a

Maxim Motor Company, Middlebore, Massachusetts

Quintuple combination 75-ft. steel aerial with full complen gpm Class A parallel-series centrifugal pump.

Maxim Motor Company, Middlebore, Massachusetts

A 500 gpm pumper-ladder combination with 200-ft. alu Truck has 150-gallon booster tank, 1000-ft. hose body. 2½-in. inlet.

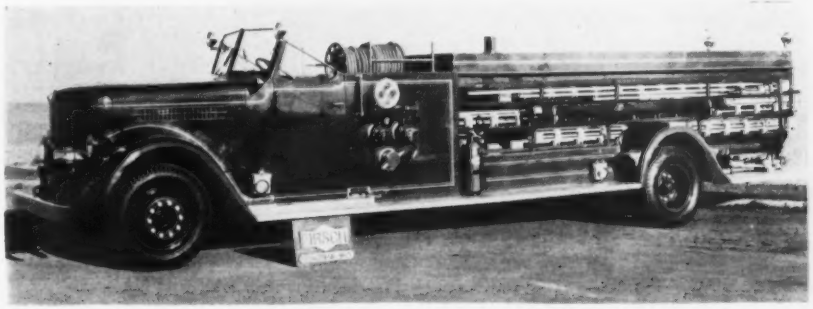
, and Their Kinfolk

lid criticism if only one truck to respond to each alarm. However, experience remains the best teacher and experience at fires has shown that a truck carrying only ladders may not be used on many calls even though ladders are sometimes an essential fire-fighting tool.

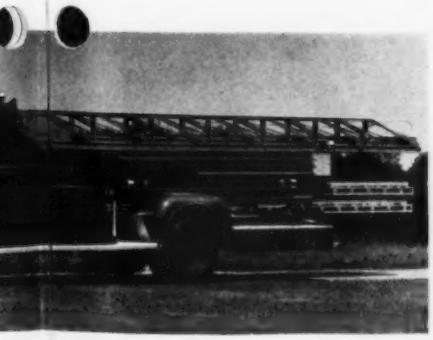
NFPA 1951 specifications for Motor Fire Apparatus call for at least a 200 gpm booster pump and 150 gallon water tank on all aerial ladders. More and more departments are spending the additional money required for a pump on the aerial ladder truck making a "Quintuple combination."

The old-time service ladder truck has been replaced either by the service-aerial which also carries booster pump equipment, as illustrated in the November FIREMEN, or by the pumper-ladder "quadruple" or "quintuple" combinations as illustrated here.

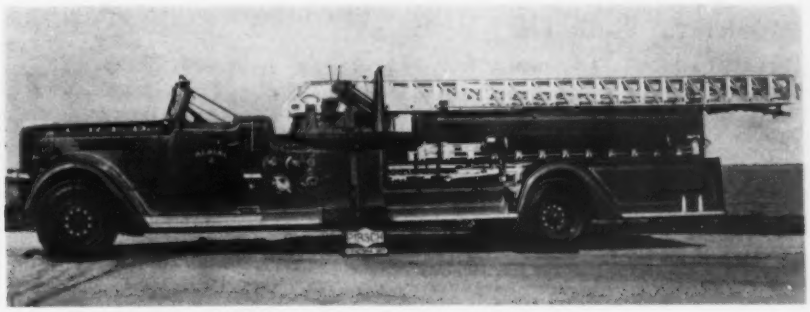
Maxim Motor Company, Middleboro, Massachusetts
A heavy-duty quadruple pumper-ladder truck with 1000 gpm enclosed pump, dual booster reels, hose body over ladder bed, flush type rear end with rear step, portable lighting plant.



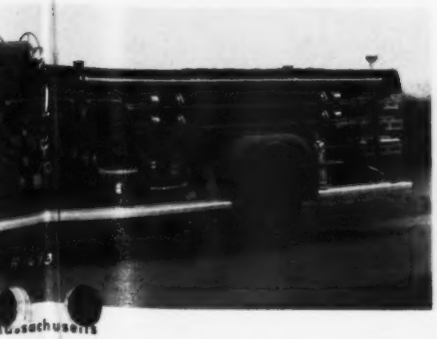
Peter Pirsch & Sons Co., Kenosha, Wisconsin
Quadruple ladder truck with 200-ft. Pirsch aluminum alloy ground ladders. Built with 750, 1000, or 1250 gpm pumps.



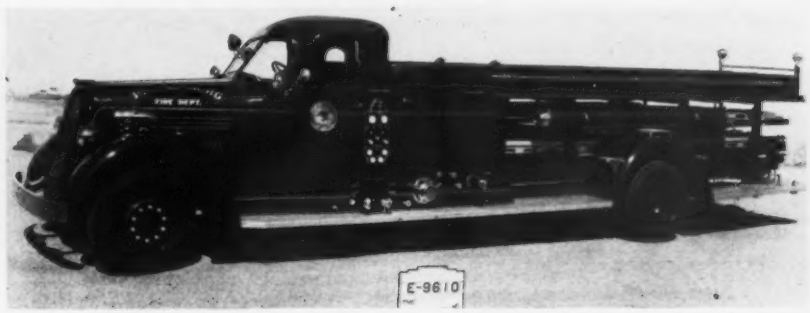
assachusetts
th full complement of aluminum ground ladders and 750
p.



Peter Pirsch & Sons Co., Kenosha, Wisconsin
Quintuple aerial ladder truck of type built with 65-, 75- or 85-ft. aluminum alloy ladder and 200 ft. of Pirsch wood or aluminum alloy ground ladders, 100-gallon tank and 750, 1000, or 1250 gpm pump.



assachusetts
th 200-ft. aluminum ladders on a "2 ton" Dodge chassis.
. hose body. Designed for small-town use. Note gated



Seagrave Corporation, Columbus, Ohio
Quadruple combination with 1000 gpm pump having pressure gages for individual outlets, complement of wooden ladders, 12-cylinder motor, 3-man cab, booster reel in rear.

THIS IS THE EIGHT-BALL YOU'RE ALWAYS BEHIND!

When You Dry Hose THE "HARD WAY"

Yes . . . the old fashioned hose tower IS the "hard way" . . . harder to use . . . costlier to build . . . and dries so slowly that the spores of mildew often begin their deadly growth before the hose is thoroughly dry.

The result? Thousands of feet of good hose are ruined every month either because of neglect or because some departments have not learned about or availed themselves of Circul-Air.

PATENTED

FIRE HOSE IS EXPENSIVE — EXPENDABLE — AND HARD TO GET

CIRCUL-AIR THE AIR CONDITIONING FIRE HOSE DRYER

circulates pre-warmed fresh air through wet, coiled hose at the rate of 5 to 6 air changes per minute. Circul-Air is designed to lengthen hose life, save man hours and hard work — improve the appearance and functional design of new fire houses, and to save valuable floor space.

NO OTHER HOSE DRYING METHOD IS SO FAST, SO EASY TO USE AND SO ECONOMICAL AND — IT'S THE ONLY DRYING MEDIUM WHOSE ACTION IS FASTER THAN MILDEW.

THESE TOWNS . . . AND 1000 OTHERS PROTECT THEIR HOSE WITH CIRCUL-AIR

AKRON : ALLENTOWN : BOSTON : BIRMINGHAM : BUFFALO : AUGUSTA : CHICAGO: CINCINNATI : COLUMBUS : COLUMBIA, S. C. : DAYTON : DETROIT : ERIE : FITCHBURG : FORT SMITH : GALVESTON : GREENSBORO : HOUSTON : HAGERSTOWN: JACKSONVILLE : KALAMAZOO : KANSAS CITY : LAKE CHARLES : LOUISVILLE: LAFAYETTE : MILWAUKEE : MIAMI : MEMPHIS : MERIDEN : NEW HAVEN : NEW BRITAIN : NEWARK : NEW ORLEANS : NASHVILLE : OMAHA : OKLAHOMA CITY: PHILADELPHIA : PROVIDENCE : PENSACOLA : ROCHESTER : SEATTLE : ST. PETERSBURG : SHREVEPORT : TOLEDO : WHEELING : WINNIPEG : WASHINGTON.

New Hose Drying Manual tells how to dry, store and conserve fire hose.

Send for your copy today!

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THE "BLITZ BUGGY" FIRE FIGHTER

4-wheel Drive

Fights All Classes of Fire - - - *Anywhere!*

Pumps fog, foam or solid stream while moving 5–20 MPH.

Carries 200 gallons of water and pumps from draft or hydrant at 150 gpm.

See page 10 December FIREMEN

Approved for rural fire fighting by N. Y. State fire underwriters.

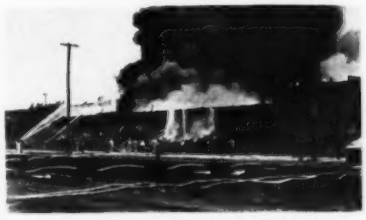
Write for details and specifications

HI-PRESSURE FOG EQUIPMENT CO. OLD FORGE, N. Y.

Fires in the News

Philadelphia, Penn., Oct. 16. (*International News Photo*) Rapid spread of flames through a stairway and an elevator shaft helped to destroy this warehouse in Philadelphia's "Produce Row" on the Delaware River waterfront. Fire fighters used ladder pipes and lines through holes breached in the wall on the north side of the building but the fire had too much headway and total estimated loss amounted to approximately $400,000.

Brooklyn, N. Y., Sept. 22. (*International News Photo*) Fire originated at a loading platform in this 3-story brick building, went through an open door of a loading trolley, then through vertical openings to the upper floors before the fire department arrived. Exploding drums of volatiles made attack difficult and 11 fire fighters were injured. A total of 17 hose streams, including 10 deck guns, was needed to control the fire.



Voorheesville, N. Y., Sept. 26. (*Acme*) This 180 x 220 ft. section of an unsprinklered brick warehouse at a U. S. Army Depot was destroyed by a fire believed to be caused by sabotage. Fire started in the vicinity of a refrigeration unit and although fire fighters responded immediately, an explosion and a rapid involvement of the structure caused the roof to collapse within 15 minutes. Damage to the warehouse was estimated at $650,000 and to the contents at $500,000. Installation of automatic fire protection equipment was underway when the fire occurred.

Bloomfield Village Fire Department, Birmingham, Michigan

SHOWN below is a new fire station recently dedicated by the Bloomfield Village Fire Department (NFPA Member Department), headed by Chief Charles W. Wiggins. This department was first organized as an auxiliary department under the OCD in 1942. With the purchase of a 1942 GMC pumper (shown at right) and the establishment of a special fire district, the department became entirely volunteer in 1943.

There are 25 members in the department which is organized into three fire companies. Recently a second piece of apparatus was made available when the department acquired a 1951 pumper built by the General Truck Corporation. The new piece has a 500 gpm Waterous 3-stage pump, a 500-gallon booster tank, two enclosed booster reels in the rear, and carries 300 feet of 1½-in. hose and 750 feet of 2½-in. hose. It also carries aluminum extension, roof and attic ladders and other miscellaneous equipment.

QRS

Flameproofing Chemicals

Have the curtains, scenery and draperies in your night clubs, school auditoriums and theatres been flameproofed? We manufacture chemicals for the flameproofing of fabrics, foliage, paper and other highly flammable decorative materials.

Write for free catalogue and name of nearest distributor.

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FIRST THOUGHT FOR FIRST AID

Vaseline Sterile Petrolatum Gauze Dressings
TRADE-MARK ®

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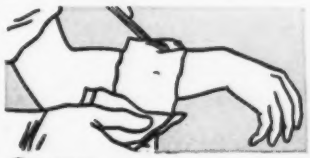
always sterile always ready

For immediate and easy application, to dress a Burn, an Abrasion, certain other Surface Injuries.

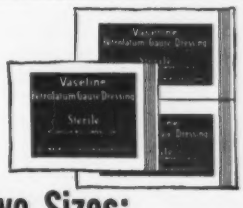
ready-made . . . compact . . . soothing . . . non-sticking . . . non-contaminating . . .

USED DIRECT FROM HANDY FOIL-ENVELOPE

To Open foil-envelope, cut with scissors along dotted line on back of envelope . . . or in an emergency, tear off seal carefully below this line . . . end of dressing is pulled out of envelope with one hand (use forceps, if handy), while envelope is held with other hand.



Cover damaged surface and area two inches beyond with two layers or more of petrolatum gauze dressing . . . then apply sterile dry bandage to keep clean and hold gently in place—using first-aid principles . . . have injury examined by a physician.



Two Sizes:

Unit envelope: one 3" x 36" dressing.
Duplex envelope: two 3" x 18" dressings.
Six envelopes to the illustrated carton.

OBTAINABLE FROM YOUR USUAL SOURCE OF MEDICAL SUPPLIES

LISTEN CURLEY . . . THAT'S ONE EXTINGUISHER YA' DON'T HAVE TO WORRY ABOUT GETTING WET!

That's right! Ansul Dry Chemical Fire Extinguishers are Water-tight. Thousands of Ansul Extinguishers stand guard over difficult fire hazards in locations where the extinguisher cannot be protected from the weather.

For installations where extinguishers cannot be pampered with expensive shelters, water-tight construction is essential for dependable fire protection. That's one reason you see so many more Ansul Dry Chemical Fire Extinguishers in outdoor locations protecting all sorts of tough hazards associated with the petroleum industry.

The HALE TYPE "BL" Discharge Valve

. . . Available on All HALE Fire Pumps

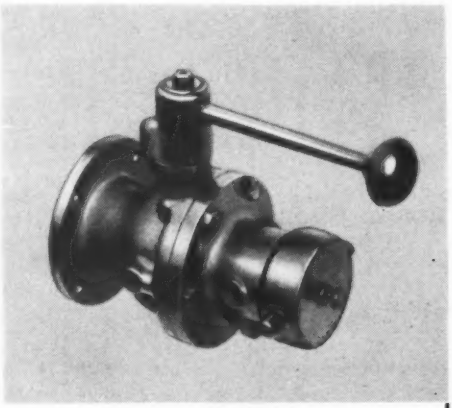
Easy-turning at all pressures, the Hale Type BL Discharge Valve can be "gated" and locked into position by a slight turn of handle to prevent creeping. The water flow is through a perfectly round waterway for low flow resistance.

Many tests have proved the valve's reliability and freedom from service troubles.

The "BL" valve is not sensitive to dirty water and will hold high pressure or vacuum. Replacement parts are inexpensive, easy to install and do not have to be "ground in." Ample handle clearance and easy turning mean freedom from "knuckle busting."

The Hale Type BL Discharge Valve is typical of constant Hale improvements resulting from constant research.

For detailed information send for Bulletin No. 293 on the Hale BL Discharge Valve.



OUTSTANDING FEATURES

- Turns easily at all pressures.
- Will not leak at pressure or vacuum.
- Circular section through valve cuts flow loss.
- Not sensitive to dirty water.
- Easily serviced . . . no "grinding in."
- Slight twist of handle locks valve into any desired position for gating.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

Hale Fire Pumps Are Built In All Standard Capacities

Compensation for a Volunteer

EX-CHIEF John J. O'Doherty of Lorain, Ohio, a trustee of the International Association of Fire Fighters, has reported an interesting compensation case from Urbana, Ohio, where a volunteer fireman died as a result of disabilities received while fighting a fire in his own home. The first claim for compensation was disallowed because the victim extinguished the fire without calling the fire department of which he was a member.

After an appeal, the compensation was allowed for the wife and children of the victim, because it was believed the injury was sustained in carrying out duties as a member of the fire department. The case is believed to be of special interest to other fire departments because the compensation was paid. It was pointed out that it was commonplace for volunteer firemen to fight fire in their own or their neighbors' homes without awaiting the arrival of fire equipment.

Fire Brings Funds for Apparatus

CHIEF George W. Alter of Hiawatha, Kansas, reported an interesting fire that involved the two-story brick Adams building occupied by Priebe & Sons, Inc. The fire started in the basement of the 50 x 140 ft. structure at 3 A.M. on October 25, and was discovered by the night clerk of a nearby hotel.

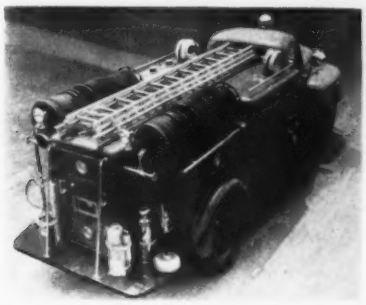
Flames went through the enclosed stairs from the basement to the first floor then spread up an open stairway to the second floor. Although the fire department had water on the fire two minutes after the alarm, flames were already beyond control.

The Mayor called fire departments from Falls City, Nebraska; Robinson, Horton, and Sabetha, Kansas, which responded in very short time along with fire fighters from Highland and Powhattan, who came without their equipment to assist. Although the loss was $200,000 the fire was confined to one building and Chief Alter adds "The equipment of the other towns opened the eyes of the people of the city. They contributed enough money by subscription to buy back the former fire truck which we had traded in for a new one."

Cafe Fire Near Batesville, Mississippi

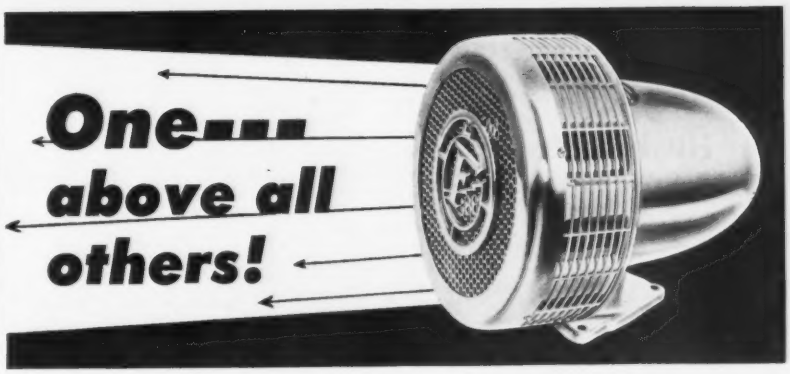
CHIEF William M. Pope of Batesville, Mississippi, reports that his department had an interesting fire call to the Colonial Cafe outside the city limits on Thursday night, October 25. The fire was apparently due to over-loaded electrical circuits and pennies were found behind the fuses. The property was presumably protected by a private water system with a 1½-inch fire plug and for which no fittings were available to supply fire department equipment. There was also a private fire pump at a lake inaccessible to the fire department pumper. This pump was supposed to supply two 2½-inch hydrants near the cafe, and a 2½-inch line was run to the fire. The private pump could not be put in operation even after the motor was started.

When the Batesville Volunteer Fire Department arrived, the fire was confined to the attic and could have been readily extinguished with fog equipment had water been available. A 1½-inch line was used to save a small hotel near the cafe which was destroyed with $60,000 loss. A new 2½-inch hydrant is to be installed on the private water system and a new fire pump provided at the lake. Even though outside of the city limits, the volunteer fire department is planning to conduct practice drills in the use of this private equipment.



New Truck for Aircraft Engine Plant

This new fire truck, Model ME-750, was built by the Cardox Corporation for the Ford aircraft engine plant. It carries 750 pounds of Cardox low-pressure carbon dioxide and 50 gallons of foam concentrate. It has a 500-gallon tank, 2 hand lines with 200 feet of 1-in. hose, 2 booster lines with 300 feet of 1-in. hose, and 400 feet of 2½-in. hose. One pump has a capacity of 500 gpm at 120 psi and another has capacity of 100 gpm at 600 psi. There is a 4-in. suction intake and two 2½-in. discharge outlets.



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One siren can be heard above all others, in fact all traffic noises . . . it's the Federal Q – the newest, greatest siren ever developed! See any siren on the market . . . the Q is the best!

You get greater sound output, greater penetration and longer coasting than with any other siren in the emergency vehicle field.

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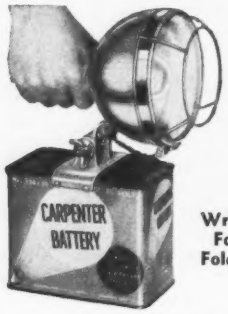

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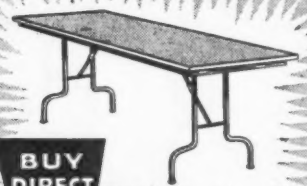

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Time for Decision

When a fire department is working under the adverse conditions of a very limited water supply, it is frequently necessary to shut down some lines or to operate lines in rotation in order to provide more effective streams from the available water supply. This is illustrated in the above picture. A 1,000 gpm pumper was connected to a 6-in. main which is estimated to have provided less than 450 gpm. As the fire fighting progressed a total of 6 lines were put into operation from this pumper, including a 2½-in. relay line to a 500 gpm pumper. Some of the resultant weak streams are shown above. One is from a 2½-in. line with a fog nozzle, while the other two are from 1½-in. lines. A single stream at this point might have permitted a more effective attack and given better reach. Fewer lines from the 1,000 gpm pumper and smaller tips also would have provided better results. Efficient use of water on the firegrounds requires quick, but correct, decisions.

"Mike Laudenklos" Fireboat

Above is the 86-foot fireboat *Mike Laudenklos* of Portland, Oregon, on a recent trial run in the Williamette River. The old 565 h.p. engines which had served from 1928 were removed and two new 600 h.p. V-12 type Hall-Scott engines were installed. The new units are 2000 pounds lighter than the old engines, work at 2100 r.p.m. with full reversibility at all speeds. Both are equipped with power takeoffs for driving pumps with a total capacity of 9700 gpm.

At left the fireboat participates in a pumping exhibition on the Williamette River before the new engines were installed. The *Mike Laudenklos* was named after a popular Assistant Fire Chief who served in the Portland Fire Department from 1890 to 1904.

Fire Chiefs' Drill School at Old Forge, New York

(*Continued from page 10*)

handling a variety of fires with high pressure fog equipment.

The second day the Auxiliary firemen of Watertown directed by Chief Walter Schell put on a spectacular ladder and rescue demonstration at an adjacent hotel. Chief Arnold Zampi and the Mattydale fire department showed the advantages of improved techniques in supplying high and low pressure streams from their tank-pumper backed up by a hydrant line. Chief Bird and the Inlet Fire Department assisted in hose layout demonstrations and Chief Lewis Wakefield of Homer demonstrated special extinguishing agents.

"Fire Foto of the Year" Contest

THE NFPA and the National Press Photographers' Association are again sponsoring a contest to select the best fire photographs of 1951. Prizes totalling $375 will be presented to the winning press photographers at the 56th Annual Meeting of the NFPA in New York City, June 9–13, 1952.

Fire departments wishing to inform local press photographers about this contest may secure full information from Melvin R. Freeman, Public Relations Manager, NFPA Executive Office. The contest is open to all press photographers in the United States and Canada for any fire photographs, whether they have been published or not, if they were taken in the calendar year ending December 31, 1951. The contest will close January 31, 1952.

Hospital Fire Safety – Second Edition

THE second edition of "Hospital Fire Safety" includes extracts from previously published reports, up-to-date revisions of NFPA standards pertinent to hospitals, a new and expanded statistical analysis of hospital fires and other material needed for reference in connection with inspection of hospital fire hazards, structural features and the planning of improvements. Copies may be obtained at $2.00 each from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts.

Friend of the Firefighter!

MIDWESTERN PROTECTIVE CLOTHING

for Men of Action!

Modern fire fighting calls for *specialized* protective clothing that safeguards the fireman's life on every run . . . clothing that enables him to use his equipment to the fullest advantage.

Every Midwestern product combines the thoughts and suggestions of practical Fire Chiefs and firemen from every section of the country . . . and every purchaser profits from years of Midwestern research and experience. That is why the famous Mackinaw Coat and other Midwestern clothing have embodied in their design every feature necessary for the protection and comfort of firemen.

In our vast selection of rubber materials you will find a type of fabric suitable for your climate and needs. The softness and flexibility of the high-grade materials used are your assurance of long time service and comfort.

Due to government requirements for Midwestern Protective Clothing, it will assist in prompt delivery if you place your order early. For complete information, have your Midwestern dealer show you our full line. A letter to the factory will also bring you material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

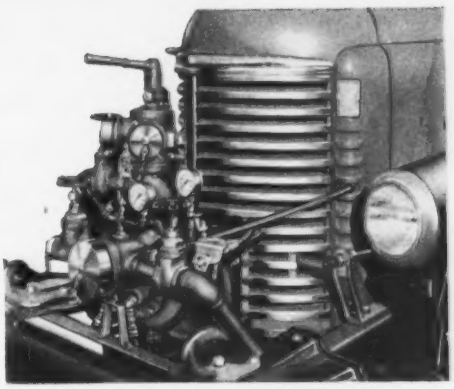
SEE WHAT YOU CAN DO

using a BARTON-AMERICAN UA FRONT-MOUNTED PUMP!

First, you can use a *larger booster tank* on a standard truck chassis. You can *get closer to the water supply* and *refill booster tank fast* at 600 G.P.M. You can "*fight your way in*" with fog gun at 400 lbs. pressure — using a straight stream at the *same time* if needed. And you can fight grass fires "*on the go.*"

All this — and more — you can do *more effectively* with the Barton-American UA Front-Mounted Pump. It meets all Underwriters' tests.

GET FULL DETAILS . . . WRITE FOR BULLETIN 8330!



UA is front-mounted . . . gear-driven . . . FROST-PROOF . . . positive priming.

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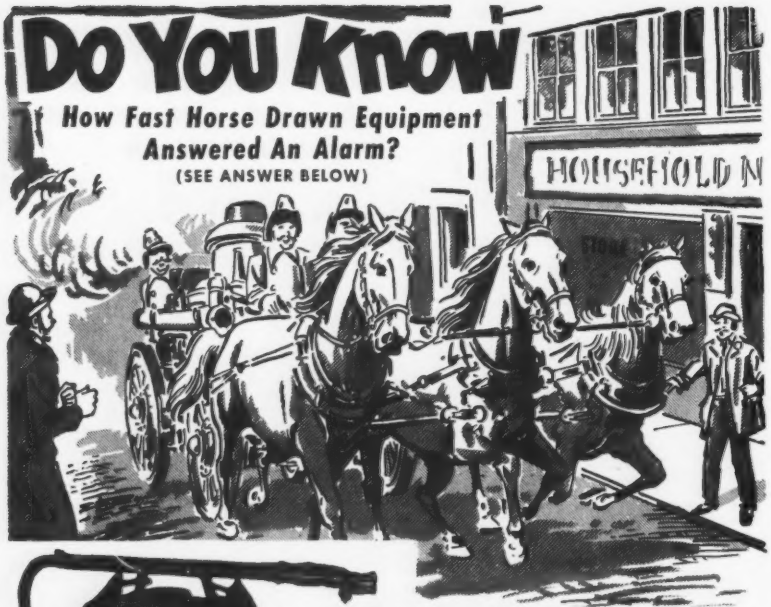
DO YOU KNOW

How Fast Horse Drawn Equipment Answered An Alarm?

(SEE ANSWER BELOW)



ANSWER: Veteran fire fighters agree that these highly trained horses charged from their stalls, were in harness and off to the fire in LESS THAN HALF A MINUTE after an alarm was received.

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Today's fire departments, foresters, lumbermen, campers and private citizens find INDIAN FIRE PUMPS the answer to their need for speedy fire fighting.

A man with one of these famous back-pack extinguishers won't lose a minute attacking fires on roofs, in fields, brush, in buildings, rooms or rubbish. When seconds count—use INDIANS.

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Widely used for slash disposal, burning right of way, etc. 1 gal. tank. Brass feed pipe. Strong construction. Designed for fire dept. backfiring work.

Smith INDIAN Drinking Water & Supply Tank

For carrying drinking water to fire fighting crews, and refilling Indian Fire Pumps. 5-gal. capacity. Push button faucet. Carries by handle or slung on back.

Write for bulletins describing the above products.

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Fred E. Barnett Company
600 Spring Street
Klamath Falls, Oregon

Titus Chain Saws, Inc.
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L. N. Curtis & Sons
426 West Third Street South
Salt Lake City, Utah

CANADIAN AGENTS:

Pinch Bros. Limited
110 Alexander Street
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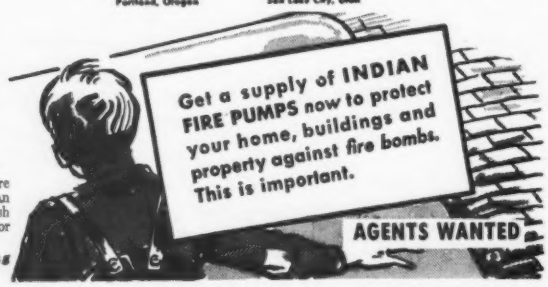
C. E. Hickey & Sons, Ltd.
Hamilton, Canada


Get a supply of INDIAN FIRE PUMPS now to protect your home, buildings and property against fire bombs. This is important.
AGENTS WANTED

Fire Prevention Law in New York

THE *Siren*, published by the Division of Safety of New York for the State Fire Instructors' Program, calls attention to the fact that the New York State Multiple Residence Law, to become effective July 1, 1952, requires that one member of the fire department of each fire district must be appointed as fire department inspector with power to enter, examine, and inspect any building or property within the area in which the fire department is responsible for fire protection to determine whether the requirements of the law are being complied with. The *Siren* points out that it is none too early for fire departments to "ascertain what man amongst them might best serve as such a fire department inspector for the task is one that requires study, consideration, and discretion."

This legislation may do much to stimulate fire prevention and inspection practices among smaller departments of the state with recognition of the fact that fire prevention is a responsibility of all organized fire departments.

Flammable Liquids, Gases, Chemicals and Explosives

THE 1951 edition of the National Fire Codes, Volume I, is now available. This revised edition contains fifty standards in convenient reference form covering the safeguarding of life and property against fire and explosion hazards of flammable liquids, gases, chemicals and explosives. The volume also includes standards on storage and handling of gasoline and liquefied petroleum gases, new tables of properties of flammable liquids including data on new solvents.

The volume is revised to include all changes made up to September 6, 1951 and is designed for desk reference use. The 800-page book is 6 x 9 inches in size and attractively bound in red cloth. Copies may be obtained for $4.00 each, postpaid, from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts. Subscribers to NFPA Book and Pamphlet Service will automatically receive this book.

THE attractive folder shown above contains important information on safe practices to be followed in the use of Christmas trees, lighting, decorations and toys, with added precautions on fire safety in the home and public places.

The NFPA Fire Prevention calendar shown below measures 8½ x 11 inches and carries fire prevention messages for every month in the year.

Both of these items contain forceful messages designed to minimize seasonal fire losses. Both have a place for imprinting the name of a fire department or other organization interested in presenting such information to the public. Both may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts, for $2.00 per hundred, $17.50 per thousand.

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Standard fabrics for over eighty years

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Available in a Complete Range of Power and Pumping Capacities

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ROANOKE, 16, VIRGINIA

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Wishes You A

Merry Fire Safe Christmas and Prosperous New Year

SERVING MUNICIPAL AND INDUSTRIAL FIRE PROTECTION CONSTANTLY SINCE 1892

POWHATAN BRASS and IRON WORKS

RANSON, WEST VIRGINIA

Phones 93 & 94 Charles Town, West Virginia

Established 1892

Government Rules Make Apparatus Status Uncertain

THERE continues to be considerable uncertainty about how promptly, if at all, a manufacturer of municipal fire apparatus can fill an order for a specific piece of apparatus for a specific city or town. Fundamentally, this is because copper, steel and other materials are subject to release on the say-so of various U. S. government agencies. Late in October, the Motorized Fire Apparatus Industry Advisory Committee met with representatives of the National Production Authority of the U. S. Department of Commerce.

The Motorized Fire Apparatus Industry is to appoint a group to study possible substitutions for critical materials and, if material shortages warrant such action, a plan for controlled distribution of fire-fighting equipment.

The industry reported that standardization is not of major importance in saving materials, but that it could increase the number of units produced. New motorized fire apparatus units needed in 1952 will be about 3,300, an increase of about 1,000 units over 1951. This figure includes orders from municipalities, the armed forces and for civil defense.

Federal civil defense authorities cannot yet say what apparatus may be furnished for civil defense purposes, but they are studying the terms of the recent congressional appropriation bills to see what, if anything, is authorized.

"... And I say budget or no budget, we gotta have a new fire truck!"

Membership Report

FIRE Department Membership in the NFPA costs $12.50 per year. For fire departments and chiefs of fire departments, this membership includes six (6) subscriptions to FIREMEN, with extra subscriptions available at $1.25 each. Individuals in fire departments who subscribe to NFPA membership receive one (1) subscription to FIREMEN with their membership. Others may obtain subscriptions for $1.25 each in addition to the regular membership dues.

NFPA Welcomes:

Alabama: Chief C. T. Porch, Alexander City Fire Dept., Alexander City.

California: Camarillo State Hospital, Camarillo; Chief Louis Alphonse, Hilt Volunteer Fire Dept., Hilt; Paso Robles School for Boys, Paso Robles.

Illinois: Chief Robert Hook, Vienna Fire Dept., Vienna; Chief Norman Litz, Central Fire Station, Waukegan.

Massachusetts: Chief Harold B. Stevens, Templeton Fire Dept., Baldwinsville.

Michigan: Chief Carl Schingeck, Pontiac Township Fire Dept., Auburn Heights; Clark Township Fire Dept., Cedarville, Mackinac; Leoni Township Fire Dept., Michigan Center; Vicksburg Volunteer Fire Dept., Vicksburg.

New Jersey: Chief Fred M. Ballinger, Mt. Royal Fire Company No. 1, Inc., Mount Royal.

New York: Chief Donald S. Marks, Colonie Fire Company, Inc., Albany; Chief Bertrand Butts, Van Etten Volunteer Fire Company, Inc., Van Etten.

Ohio: Warren Township Volunteer Fire Dept., Leavittsburgh.

Oklahoma: Bartlesville Fire Dept., Bartlesville.

Oregon: Chief Scott B. Kelly, Pine Grove Fire Dept., Hood River.

Pennsylvania: Elkland Fire Department, Elkland; Central Pennsylvania Fireman's Association, Mechanicsburg.

Tennessee: Chief E. L. Savely, Woodmont Fire Dept., Nashville.

Virginia: Chief Carson W. Gregory, Jr., Chase City Volunteer Fire Company, Chase City.

Wisconsin: Dodgeville Fire Dept., Dodgeville; Chief Theo. H. Bies, Merton Fire Dept., Merton.

Canada

New Brunswick: Hampton Village Local Improvement District, Hampton Village.

Ontario: Chief Scott Williams, Sioux Lookout Fire Dept., Sioux Lookout.

"I like Scott Air-Pak because:

...it gets into action immediately, then helps me get to the source of a fire quickly and safely. Keeps me comfortable and confident while I'm working under tough breathing conditions. And I sure like the supply of cool, refreshing *air* it gives me. It keeps me pepped up even when the going is rugged."

See your Scott distributor for FREE DEMONSTRATION of Scott *Air-Pak*, or write us *today* for full details.

Have You Seen The New Scott DEMAND Oxygen Inhalator?

ESTABLISHED IN 1932 Scott FOR SAFETY—FOR SERVICE

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
236 ERIE ST. LANCASTER, N. Y.
CANADA: SAFETY SUPPLY CO. BRANCHES IN ALL PRINCIPAL CITIES
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Read what this pleased customer says:

"We have received all our uniforms and badges and believe me we are all pleased — fine fit and fine uniforms." (John A. Johnson, Treas., Golden Valley Fire Dept., Minneapolis, Minn.)

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or
POLICE CATALOG H-63

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Corner 32nd Street: Phone MU 6-0828

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What's New In Fire Equipment?

Reflectorized Fire Emblems

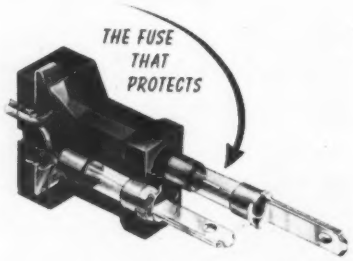
Minnesota Mining and Manufacturing Company, St. Paul, Minnesota, is manufacturing emblems that are brightly visible at night and can be sewn or cemented in a single piece on fire fighters' coats. The new emblem is a single piece of "Scotchlite" brand reflective fabric on which only the letters "FIRE" are brightly reflective at night. The background is "blacked out" with a special paint, in any color desired. Further information may be obtained from the manufacturer at the above address.

Alfco Pressurized Fire-Gun

American-LaFrance Foamite Corp. of Elmira, N. Y., has announced a new 1-quart air-pressurized fire extinguisher. It discharges vaporizing liquid fluid for extinguishing both flammable liquid and electrical type fires. The new extinguisher is called the Alfco Pressurized Fire-Gun and carries the inspection and approval label of Underwriters' Laboratories. It aims and operates like a gun and is easily recharged. Fully illustrated literature may be obtained from the manufacturer.

Portable Electric Megaphone Systems

Audio Equipment Company, Inc., 805 Middle Neck Road, Great Neck, New York, manufactures portable electric megaphone systems. Manufacturer states that 1,000 ten-second messages or 3 hours of continuous use may be provided on one battery charge, and that the actual measurement of the human voice at a fixed distance is 2500 times greater when M-140 electric megaphone and A-126 amplifier is used. The battery is recharged by plugging in the cable provided to a 115-V. 60 cycle outlet. Further information may be obtained from the manufacturer.



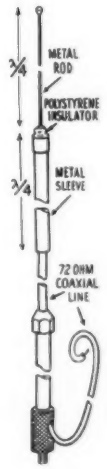
Safety Fuse Plug

Noma Electric Corporation, 55 West 13th Street, New York 11, New York, has designed a new safety fuse plug (shown above). It consists of two easily replaced, 5 ampere, 125-volt cartridge type fuses in the plug to guard against overloads and accidental short circuits. The plug may be used as a protective feature on Christmas lights and other multiple burning indoor and outdoor lighting sets. Further information may be obtained from the manufacturer at the above address.

"Scene in Action" Fire Prevention Display

A. L. Lind Company, 5036 Thomas Avenue South, Minneapolis 10, Minnesota, has developed the "action display" shown above. The heat of an electric lamp revolves a cylinder inside the display which produces a scene of a burning home. According to the manufacturer these displays are finding wide favor by the Fire Prevention Departments of many cities. Further information may be obtained from the manufacturer.

No. 113



No. 114

Master Mobile Mounts, Inc., Has New Antennas

Two new antennas have been announced by Master Mobile Mounts, Inc., P.O. Box 1817, Los Angeles, California. No. 113 Master Roof-top Antenna is a quarter-wave, roof-top design for police and fire vehicles in the VHF range from 140–165 megacycles. No. 114 Master Coaxial VHF Antenna is a sleeve type for open vehicles. Further information may be obtained from the manufacturer at the above address.

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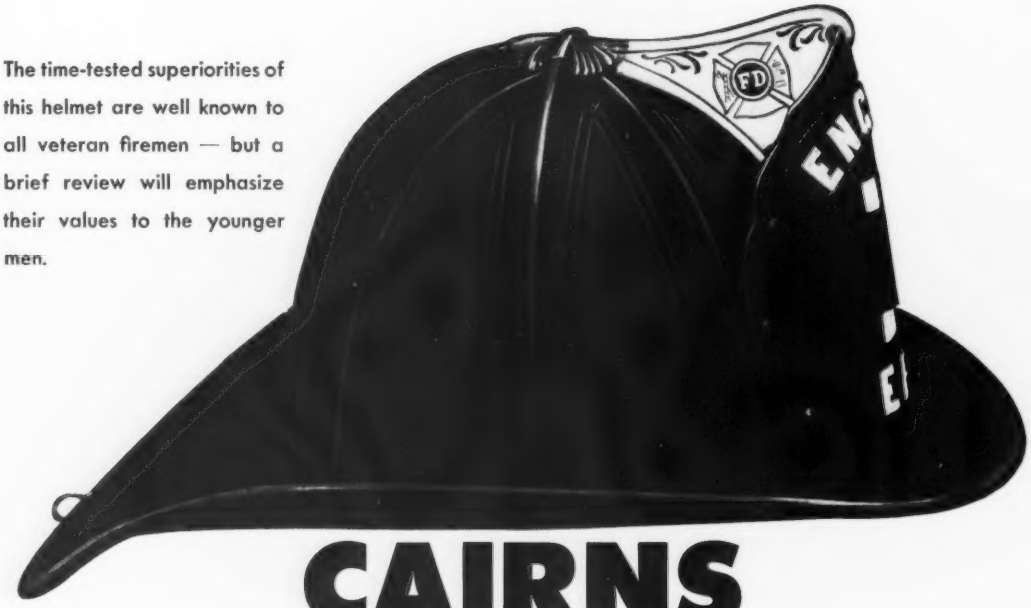
Garden City, New York	Sept.	24
Haddonfield, New Jersey	Sept.	26
Hampton Falls, New Hampshire	Jan.	17
Huntington Park, California	Sept.	26
Kittitas County, Washington	July	14
Lakeville, Indiana	July	25
Lewiston, Maine	Mar.	27
Los Angeles County, California	May	10
Lymansville, Rhode Island	July	20
Marydel, Maryland	July	20
Morrisville, Vermont	April	18
Mount Vernon, Oregon	April	18
New Clarus, Wisconsin	July	20
New Jersey State Hospital	July	25
Philadelphia, Pennsylvania	May	14
Pittsfield, Mass.	Nov.	14
Rosedale, Pennsylvania	April	18
St. Louis, Missouri	Oct.	6
Salina, Kansas	Jan.	6
Steinbach Volunteer Brigade, Manitoba, Canada	June	17
Vashon Island, Washington	June	17
West Memphis, Arkansas	Nov.	16
West Suburban Fire Protection District, Rockford, Illinois	Nov.	16
Fire Chiefs' Drill School at Old Forge, New York	Dec.	10
Fire Effects of Bombing Attacks, Part I	Feb.	9
Fire Effects of Bombing Attacks, Part II	March	16
Fire Fighting vs. Fire Prevention	Sept.	36
"Fire Foto of the Year" Contest	Dec.	23
Firemen's Training:		
Arson Investigators Course	Feb.	24
Colorado Training	Jan.	26
Fire Inspection Practices Course at Toronto	April	26
Firemen's Training in Kansas	Dec.	12
Fire Safety Training Conference in Ohio	Sept.	28
Florida Fire College	May	21
Napa Junior College Fire Fighting	Jan.	18
Norfolk, Virginia, Fire College	May	14
Oklahoma Fire Protection Course	Jan.	26
Realism in Training (Penn.)	July	15
State and Provincial Firemen Training, 1951	Nov.	6
Survey of Fire Department Instruction	April	22
23rd FDIC Meeting	Feb.	15
U.S.C. Professional Training Program	Sept.	30
Fire Prevention, Atlantic, Iowa	Feb.	23
Fire Prevention Awards to Navy	June	11
Fire Prevention Week	Sept.	10
Fire Prevention Contest	Oct.	9
Fires:		
Alexandria, Virginia, Warehouse	Nov.	26
Baltimore, Md., Market District	July	17
Baltimore, Md., Ship	March	17
Batesville, Mississippi	Dec.	21
Bend, Ore., Furniture Shops	Oct.	13
Bozeman, Mont., Stock Yards	Sept.	22
Brighton, New York, Gas Explosions	Nov.	15
Bronx, N. Y., Yacht Basin	Sept.	22
Cedar Rapids, Ia., Dwelling	Jan.	15
Charlottetown, P.E.I., Buildings	Oct.	30
Chicago, Ill., Factory	Feb.	27
Chicago, Ill., Stores	Sept.	22
Chico, Cal., Stores	Jan.	15
Cincinnati, Ohio, Warehouse	June	12
Dayton, Ohio, Factory	Jan.	15
Evansville, Ill., Conflagration	Feb.	7
Galena Park, Texas, Gasoline Tank	April	12
Halltown, W. Va., Truck and Dynamite	April	24
Harrisonville, Mo., County Home	Jan.	15
Houston, Texas, Business Block	April	12
Indianapolis, Ind., Airplane Factory	Sept.	22
Jacksonville, Fla., Business Block	July	5
Jeffersonville, Pa., Stores	Oct.	18
Kansas City, Mo., Conflagration	Sept.	11
Lansing, Mich., Office Building	April	7
Large, Penn., Bus Terminal	April	12
McMechen, W. Va., Warehouse	July	17
Newark, N. J., Propane Terminal	July	5
New York, N. Y., Warehouse	April	12
Norfolk, Va., Nitrate Warehouse	Sept.	22
North Bergen, N. J., TV Tower	Jan.	22
North Liberty, Ind., Factory	April	12
Owasso, Mich., Drying Tunnel	June	12
Peabody, Mass., Warehouse	Oct.	11
Peterboro, Ont., Business Block	July	17
Philadelphia, Penn., Ship and Pier	July	17
Quebec, Canada, Hotel	Sept.	30
Red Bank, N. J., Lumber Yards	Jan.	15
Rensselaer, N. Y., Church	June	12
San Francisco, Cal., City Hall	April	19
San Quentin Prison, Cal., Jute Mill	June	12
St. Paul, Minn., Shopping Center	June	12
St. Paul, Minn., Factory	April	12
Sarnia, Ont., Business Block	June	12
Silver Spring, Maryland, Home	Nov.	30
Sisseton, S. D., Store	Jan.	15
Somerville, Mass., Warehouse	Jan.	15
South Kingstown, R. I., Dwelling	June	12
Stevens Point, Wis., Store	Sept.	27
Fire Squad, Saranac Lake High School	Dec.	14
"Fire Station Design"	July	27
Fire Station, Middleton, N. S.	Feb.	22
First Fire Foto Contest Winners	May	15
Fire Waste Contest Winners	June	16
Geiger Counter	April	23
Grange Provides Fire Station at Robertsville, Conn.	Feb.	17
Highlights of 55th NFPA Annual Meeting	June	6
Hospital Fires, Life Safety	March	9
Hotel Fire Safety	Feb.	11
Improvements in Fire Equipment at Pittsfield, Mass.	Nov.	14
Ingenuity in St. Louis Fire Dept. Shops	Dec.	13
Inspections by Fire Fighting Personnel	March	15
"Invite a Carload"	May	23
Japan, Public Fire Protection, Part I	May	8
Japan, Public Fire Protection, Part II	June	14
Jeep for Brush Fires	July	14
Lansing Provides Standby Power for Fire Station	Feb.	22
Latest in Aerial Ladders	Nov.	18
Latest in Heavy Duty Pumpers	Oct.	14
Latest Suburban and Rural Fire Apparatus	Sept.	12
Library for Firemen in Memory of Mort Walton	Jan.	26
Life Safety from Fire	Jan.	10
Life Safety in Hospital Fires	March	9
"Little Giant" of North Randolph	Dec.	8
Making a Good Job of It:		
Choosing Pumper Layouts	July	12
Collector Pumping	June	13
Estimating Hydrant Pressures Where Pumpers Are Operated at Rated Capacities	Oct.	10
In-Line Pumper Operation	April	9
Pre-connected 1½-in. Quick Lines	May	16
Relating Nozzle Pressure to Friction Loss and Flow	Sept.	23
Transfer of Firemen	Feb.	10
Two Pumpers at a Hydrant	Nov.	12
Using Pumper Gages for Estimating Hydrant Performance	Aug.	12
Maryland Fire Companies Rate Insurance Reductions	April	26
Municipal Fire Administration Book	Feb.	26
NFPA 55th Annual Meeting	June	6
NFPA Standards for Motor Fire Apparatus — 1951	June	8
Oberlin, Ohio, Dispatch System	July	18
Philadelphia Fire Department Radio-Equipped	May	14
Pipe Line Demonstration	July	16
Prefire Planning at 12th U. S. Naval District	Nov.	17
Protection Against Lightning	July	6
Public Fire Protection in Japan, Part I	May	8
Public Fire Protection in Japan, Part II	June	14
Pumps:		
Charging Hose Lines	Oct.	12
Getting Water	Aug.	8
Getting Water from Hydrant	Sept.	20
Latest in Heavy Duty Pumpers	Oct.	14
Latest Suburban and Rural Fire Apparatus	Sept.	12
Maintaining Pumpers	June	20
Making and Breaking Couplings at Pumper	Sept.	31
Putting Pump in Service	July	13
Some In-Line Pumper Evolutions Worth Trying	April	10
Taking Delivery of a New Pumper	Nov.	24
Tests of Pumpers in Tandem	Dec.	11
Quads, Quints, and Their Kinfolk	Dec.	16
Radio:		
Arlington County, Va.	Aug.	15
Network in Lake County, Ill.	July	18
Dispatch System in Oberlin, Ohio	July	18
Philadelphia Fire Department	May	14
Records for the Small Department	Feb.	18
Relationship between Forest Fire Control and Municipal and Rural Fire Protection	Aug.	25
Rescue Squad Training in R. I.	Aug.	14
Rescue Truck	Aug.	15
Roscommon Demonstration	Oct.	24
Safeguarding Electrical Equipment on Fire Trucks	Nov.	13
Soft Suction Hook-up	July	16
"So You Want a Rescue Truck"	Aug.	15
Standards for Motor Fire Apparatus	June	8
Teachers Guide for Safe Use of Electrical Equipment	May	20
Training Forest Fire Fighters in Ontario	Aug.	18
Two-way Radio for Arlington County, Va.	Aug.	15
"Volunteers"	Aug.	6
Volunteer Fire Departments in Iowa	March	24
What is a Fire Department	Nov.	22
Your Aviation Fire Problem	Sept.	18

Here's LIFE-TIME Safety and Serviceability

The time-tested superiorities of this helmet are well known to all veteran firemen — but a brief review will emphasize their values to the younger men.



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(5A — CITY SERVICE)

"REGULATION" STYLE: — As "traditional" as the American fire-fighting spirit; fundamentally, the original fire helmet introduced by **CAIRNS** in the early 1800s, but kept up-to-date through the years to meet modern conditions.

DURABILITY: — Specially-tanned top-grain steer-hide makes the **CAIRNS** the toughest, longest-wearing fire helmet ever produced. Records of active service of 25 years and over are not unusual; practically everlasting, if our reconditioning service is availed of.

SHOCK PROTECTION: — The natural resiliency of the leather absorbs blows as no other helmet material can. And the **CAIRNS CUSHION LINING** gives added shock protection.

ELECTRICAL PROTECTION: — The leather in the **CAIRNS HELMET** is a non-conductor of electricity — **but never get careless with exposed wires.** A "hot" wire may knock out a wet fireman, no matter what he is wearing.

FIT: — Ten actual sizes insure better fit, better "feel," better looks — **the right helmet for your head.**

COMFORT: — The **CAIRNS PATENTED CUSHION LINING** is the most efficient and comfortable suspension ever devised for rigid head-gear; molds to individual head shape; no uncomfortable pressure, no troublesome chin strap; perfect balance; built-in ear-laps fold inside when not in use. The complete assembly is firmly recessed in the helmet — snaps in, snaps out, no tools needed.

What better proof of our claims than the continued use of the CAIRNS LEATHER HELMET for fifty to a hundred years by the leading Departments of the country?

Ask for Catalog 340

CAIRNS & BROTHER, INC.

OUTFITTERS TO FIREMEN SINCE 1836

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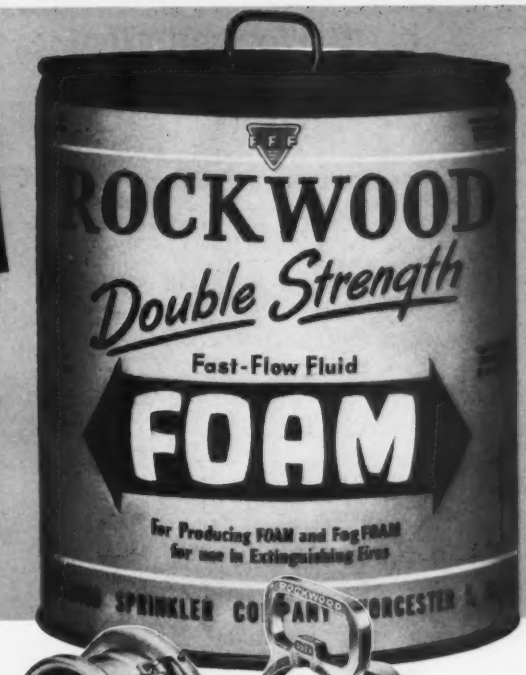
3 better ways to fight fires...

ALL WITH ONE NOZZLE



1 Fog FOAM
2 Solid FOAM stream
3 High Velocity WaterFOG

Rockwood *Double Strength* FOAM Liquid used thru Rockwood FFF FogFOAM Nozzles enables fire fighters to cover burning surfaces with a blanket of FOAM faster and more efficiently. The 3 methods — 1. FogFOAM, 2. Solid FOAM Stream and 3. High Velocity WaterFOG combined in the one FFF FogFOAM Nozzle will give you a *better weapon* for extinguishing and controlling fires in gasoline and other flammable liquids and materials.

Rockwood FOAM Liquid and FogFOAM Nozzles are now being used to fight large running gasoline fires and spill fires in oil refineries, fires in oil storage tanks — or for crash-rescue fire fighting at airports and also for municipal and industrial fire fighting requirements. All these hazards require special proportioning systems for discharging the FOAM Liquid. Custom engineered proportioning systems to meet such unusual requirements is a Rockwood specialty. For complete data and prices write today.

Remember, the most efficient way to apply Rockwood FOAM Liquid and Wetting agent to most fires is thru Rockwood fire fighting devices.

New Lightweight type FFF FogFOAM Nozzle with FogFOAM screen attached. Available in three sizes for service on 1½" and 2½" or 3½" hose.

(1.) Thru the FogFOAM screen a wide pattern of FogFOAM can be applied directly to the burning gasoline without harmful agitation to the surface. This means faster and more efficient extinguishment of fire. FogFOAM screen can easily be attached or removed.

(2.) Thru FOAM shaper a solid FOAM stream can be projected to reach fires at considerable distances. FOAM Shaper can also be easily attached or removed.

(3.) If FOAM Liquid supply is exhausted, the Rockwood FFF FogFOAM Nozzle will discharge a wide pattern of *High Velocity* WaterFOG.

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500 GALLON UNDERWRITER PERFORMANCE
PLUS HIGH PRESSURE FOG

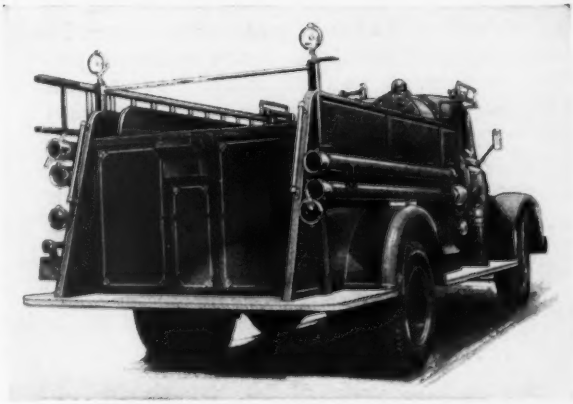
A highly efficient pumper apparatus with the Champion Three Stage Centrifugal Pump powered by the 1951 International. The Pump is the Type SH500 which delivers 500 gallon Underwriter performance plus 60 gallons per minute at 850 lbs. for high pressure fog.

Or this Darley Apparatus is also available in Underwriter capacities of 600 GPM and 750 GPM — modern commercial truck motors having adequate power for the larger capacity pumps.

Booster Tank: 800 gallon flat type with quick action rear fill and special line piped from pump to tank for refilling tank by pumping at draft.

Booster Hose Reels: Two with horizontal and vertical guide rollers so that hose can be pulled off quickly and easily in any direction without rubbing or binding anywhere.

Compartments: Roomy and adequate for safe, convenient storage of equipment.



Write for Fire Apparatus Booklet

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Front and Midship Pumps

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